NORTEL

Product Brief
Nortel Business Ethernet Switch 1000 Series

Enable your power users to share ideas and exchange information more effectively than ever by providing high speed from the desktop to the edge.

Combine your existing fast Ethernet edge switches into one central point for reduced costs, simplified management and greater efficiency.

Do it with a powerful switch that provides Gigabit performance and the ability to aggregate multiple switches.

As a growing business, you know the importance of connections — especially between the people, applications and devices that make your business tick. That's why it's crucial that you have a reliable, secure and high-performance networking solution in place to provide that connectivity.

Offering Gigabit performance, built-in security and enterprise-grade features, the Business Ethernet Switch 1000 is the ideal solution for bringing high-speed communications to your organization, whether it is for data, voice and video application, or whether it is from the desktop, wireline or wireless.

Nortel Business Ethernet Switch 1000

The Nortel Business Ethernet Switch (BES) 1000 family of standalone Layer 2 Gigabit switches provides an easy and affordable way to connect the people, applications and networking products your business depends on every day. The 1000 series offers high-performance, robust features specifically crafted for your needs, Power over Ethernet (PoE) for easily and conveniently adding plug-

and-play devices, and user-friendly management through an easy-to-use, illustrative and intuitive GUI.

Used as an aggregation switch, the Business Ethernet Switch 1000 allows you to create a more manageable solution that centralizes the Nortel Business Ethernet 50/100/200 currently deployed in your network — eliminating the need for full-mesh interconnections. The result is a more efficient solution that requires less cabling and fewer ports for interconnections, and a more scalable solution that grows as your business blossoms.

The Nortel Business Ethernet Switch 1000 series joins the Nortel Business Ethernet Switch 50/100/200 series of products to round out the Nortel SMB portfolio, which is made up of award-winning products that bring all the benefits of performance, security, reliability and convergence to your organization at a competitive cost.

Nortel Business Ethernet Switch 1000 Series

Model	Port configurations
BES1010-24T	24 x 10/100/1000 Mbps ports + 2 Gigabit uplink ports (SFP/RJ45)
BES1010-48T	48 x 10/100/1000 Mbps ports + 2 Gigabit uplink ports (SFP/RJ45)
BES1020-24T PWR	24 x 10/100/1000 Mbps ports with PoE on 12 ports + 2 Gigabit uplink ports (SFP/RJ45)
BES1020-48T PWR	48 x 10/100/1000 Mbps ports with PoE on 24 ports + 2 Gigabit uplink ports (SFP/RJ45)

Nortel Business Ethernet Switch 1000 Series

Easy to install

An intuitive web user interface makes Business Ethernet Switch 1000 setup and administration easy. Plug-and-play capabilities such as Auto-negotiation of speed and duplex mode, Auto-MDI/MDIX, color-coded status LEDs, as well as support for a default IP address and BootP for automatic IP address allocation make the installation and setup process simple. Users also have the power to set up advanced features such as VLANs, PoE and RADIUS in the most economical way to facilitate a truly powerful, secure, reliable and converged network.

Simple to manage

Managing the Business Ethernet Switch 1000 family is made easy through the Nortel Business Element Manager. This powerful tool enables simplified management for the entire Nortel SMB portfolio — including the Business Ethernet Switch 1000 family — through the use of one consistent, familiar GUI. It's a non-stop solution that enables you to operate, administrate, manage and provision your entire network from one desktop computer.

Convenient to add end-user devices

Power over Ethernet (PoE) is supported on both the Business Ethernet Switch 1020-24T PWR and the Business Ethernet Switch 1020-48T PWR models. This feature enables the switches to provide power to PoE-ready devices such as Voice over IP (VoIP) handsets or wireless LAN access points and security cameras — all through a single Ethernet cable, resulting in not only significant cost savings but also ease of use and convenience.

Quality of Service (QoS)

Business Ethernet Switch 1000 supports voice, data, video and other emerging applications on one high-capacity, high-performance platform. To make convergence truly a reality, Business Ethernet Switch 1000 delivers the performance required for applications like IP telephony, multimedia and collaboration with an advanced mechanism to classify, process and expedite traffic based on an application's requirement. Combined with wire-speed routing and filtering, the Business Ethernet Switch 1000 ensures QoS to applications whenever and wherever.

Built-in security

Business Ethernet Switch 1000 provides extensive security features including EAP, RADIUS, intrusion control and destination address filtering. These features not only add protection for switch configuration data against unauthorized management access, but also help to segment and secure sensitive traffic or network access.

Nortel SMB solutions

Nortel provides an end-to-end solution for small and medium-sized businesses. Recognizing one size doesn't fit all, Nortel has designed solutions that allow you to build networks that best align with your business needs. From wired connectivity through the Business Ethernet Switch, to wireless connections through the Nortel Business Access Point products, Nortel has a portfolio of winners to help SMBs grow their business with a complete communications solution.

The Business Ethernet Switch 1000 series features Power over Ethernet (PoE). This built-in functionality enables the Business Ethernet Switch 1000 to provide power to PoE-ready devices such as Voice over IP (VoIP) handsets, wireless LAN access points and security cameras — all through a single Ethernet cable.

Feature specifications

Hardware features	• Switch fabric: 48 Gbps on 24 port, 96 Gbps on 48 port • Forwarding rate: 93 Mpps on 24 port, 187 Mpps on 48 port • 8MB flash memory • 64MB DRAM • 8,000 MAC address table size • Power over Ethernet (PoE) (802.3af) • 4 hardware queues per port • Auto-negotiation • Auto-MDI/MDIX • Reset button
Layer 2 switching	• 32 port-based VLANs (802.1D, 802.1Q) • VLAN tagging (802.1Q) • Link Aggregation (802.3ad): 6 aggregations, 4 ports per aggregation • Spanning Tree/Rapid Spanning Tree (802.1D/802.1w) • Network topology auto discovery (802.1AB)
Security	• Intrusion control • Destination address filtering • EAP (802.1x) • RADIUS • Per port BaySecure • IP access control list (ACL) • Access/password control
Quality of Service (QoS)	• Packet Classification based on 802.1p and DSCP markings • Weighted Round Robin or Strict Priority Queuing for queue servicing • Broadcast/multicast packet storm control
Management	• Centralized management of entire SMB portfolio with Business Element Manager • SNMP v1/v2/v3 • RMON • Default IP address • IGMP v1/v2 • SNTP

Technical specifications

Physical specifications		
(All models have the same dimensions)	Height: 1.7008 in (4.32 cm) Width: 17.3228 in (43.99 cm) Depth: 13.5433 in (34.39 cm)	
Weight	BES1010-24: 10.32 lbs, 5.16 Kg BES1010-48: 11.72 lbs, 5.86 Kg BES1020-24: 11.92 lbs, 5.96 Kg BES1020-48: 13.92 lbs, 6.96 Kg	
Network protocol and standards compatibility	• IEEE 802.3 10BASE-T (ISO/IEC 8802-3, Clause 14) • IEEE 802.3u 100BASE-TX (ISO/IEC 8802-3, Clause 25) • IEEE 802.3u Auto negotiation on Twisted Pair (ISO/IEC 8802-3, Clause 28) • IEEE 802.3x (Flow Control on the Gigabit Uplink ports) • IEEE 802.3z (Gigabit) • IEEE 802.1d MAC Bridges (ISO/IEC 10038) • IEEE 802.1Q (VLAN) • IEEE 802.1p (Prioritizing) • IEEE 802.1D (Spanning Tree Protocol) • IEEE 802.1w (Rapid Spanning Tree Protocol) • IEEE 802.3ad (Link Aggregation) • IEEE 802.3af (Power over Ethernet) • IEEE 802.1AB (Link Layer Discovery)	
Environmental	• Operating temperature: 0° to 50°C (32° to 122°F) • Storage temperature: -40° to 70°C (-40° to 158°F) • Operating humidity: 10 to 95% maximum relative humidity, noncondensing • Storage humidity: 5 to 95% maximum relative humidity, noncondensing • All Business Ethernet Switch products are RoHS compliant to the 6/6 compliance standard	

Electrical
- Input voltage (AC version): 100 to 240 VAC @ 50 to 60 Hz
- Input power consumption (AC version):
  - BESBES1010-24: 54W maximum
  - BES1010-48: 100W maximum
  - BES1020-24: 225W maximum
  - BES1020-48: 380W maximum
- Input current (AC version): 0.8 A @ 100 VAC, 0.4A @ 240 VAC
  - BES1010-24: 1.2 Amp
  - BES1010-48: 1.6 Amp
  - BES1020-24: 3.6 Amp
  - BES1020-48: 5.65 Amp
- Maximum thermal output:
  - BES1010-24: 184 BTU/hr
  - BES1010-48: 341 BTU/hr
  - BES1020-24: 768 BTU/hr
  - BES1020-48: 1297 BTU/hr
- Calculated MTBF @ 25°C:
  - BES1010-24: 312,426 hrs
  - BES1010-48: 178,894 hrs
  - BES1020-24: 201,415 hrs
  - BES1020-48: 132,701 hrs

Accoustic Noise – Noise level of 45dB

EMC Agency Approvals to the latest release of the following standards
- CISPR 22, Class A
- CISPR 24, Class A
- US: CFR47, Part 15, Subpart B, Class A
- Canada: ICES-003, Issue 3, Class A
- Australia/New Zealand. AS/NZS 3548, Class A
- Japan: VCCI, class A
- Taiwan: CNS 13438, Class A
- Europe: EN55022, Class A and EN55024
- EN61000-3-2, EN61000-3-3
- EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11

Safety Agency Approvals to the latest release of the following standards
- IEC 60950, CB report and certificate with all national deviations
- UL 60950
- CSA 22.2 No. 60950950
- EN 60950
- UL-94-V1 flammability requirements for PC board
- NOM-019

RFC support

RFC 1493 (Bridge MIB); RFC 2863 (Interfaces Group MIB); RFC 2665 (Ethernet MIB); RFC 2737 (Entity MIBv2); RFC 2819 (RMON MIB); RFC 1271 (RMON); RFC 1157 (SNMP); RFC 3412 (SNMP Message Processing); RFC 791 (IP); RFC 792 (ICMP); RFC 793 (TCP); RFC 783 (TFTP); RFC 826 (ARP); RFC 768 (UDP); RFC 951 (Bootp); RFC 2236 (IGMPv2); RFC 1112 (IGMPv1); RFC 1945 (HTTP v1.0); RFC 894 (IP over Ethernet); RFC 2674 (Q MIB); RFC 2578 (LDAPv2); RFC 3621 (PoE MIB); RFC 2579 (SMIv2); RFC 3411 (SNMP Frameworks); RFC 2011 (MIB-II); RFC 2021 (RMON MIBase v2 using SMIv2); RFC 3413 (SNMP Applications); RFC 3415 (VACM for SNMP); RFC 3418 (MIB for SNMP); RFC 2933 (IGMP MIB); RFC 3584 (Co-existence of SNMP v1, v2, and v3); RFC 3291 (Textual Conventions for Internet Network Addresses); RFC 2213 (Integrated Messaging Services MIB); RFC 3289 (Differentiated Services MIB)

Nortel is a recognized leader in delivering communications capabilities that enhance the human experience, ignite and power global commerce, and secure and protect the world's most critical information. Our next-generation technologies, for both service providers and enterprises, span access and core networks, support multimedia and business-critical applications, and help eliminate today's barriers to efficiency, speed and performance by simplifying networks and connecting people with information. Nortel does business in more than 150 countries. For more information, visit Nortel on the Web at **www.nortel.com**.

For more information, contact your Nortel representative, or call 1-800-4 NORTEL or 1-800-466-7835 from anywhere in North America.

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